



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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May 12, 1997

TO: File

THRU: Daron Haddock, Permit Supervisor

FROM: Jess Kelley, Reclamation Specialist

RE: Addition of Federal Lease U-024316, Co-Op Mining Company, Bear Canyon Mine, ACT/015/025-97I, Folder #2, Emery County, Utah

SUMMARY:

The permittee submitted this amendment for Division approval on March 28, 1997. This memorandum constitutes this writer's review of this submittal. It has been written in a form in which it can be inserted directly into the original Technical Analysis (TA).

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR Sec. 783., et al.

PERMIT AREA

Regulatory Requirements: 30 CFR Sec. 783.12; R645-301-521.

Analysis:

The permit area was enlarged in 1997 to include Federal Lease U-024316, which lies at the north end of the original permit area. The additional area is shown on Plate 2-1--Permit Area. A formal description of the additional area is found on page 2-3 and is as follows:

Township 16 South, Range 7 East, Salt Lake Base & Meridian
Section 13: W $\frac{1}{4}$
Section 14: NE $\frac{1}{4}$

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Findings:

The plan fulfills the requirements of this section.

**MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE
INFORMATION**

Regulatory Reference: 30 CFR Sec. 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Analysis:

Affected Area Boundary Maps

The permit area was enlarged in 1997 to include Federal Lease U-024316, which lies at the north end of the original permit area. The additional area is shown on Plate 2-1--Permit Area. Plate 2-1 was certified by Kimly C. Mangum, a licensed professional engineer registered in the state of Utah.

Coal Resource and Geologic Information Maps

The permit area was enlarged in 1997 to include Federal Lease U-024316, which lies at the north end of the original permit area. Coal resource and geologic information for the lease area was added to Plates 6-1 through 6-12. The geology of the area, including the locations of coal outcrops and property and lease boundary lines, is shown on Plate 2-1--Geologic Map.

There are 3 minable coal seams in Federal Lease U-024316. They are, from lowest to highest, the Hiawatha seam, the Blind Canyon seam, and the Tank seam. The thickness and orientation of the Hiawatha seam are shown, respectively, on Plates 6-7--Hiawatha Seam Isopach Map and 6-8--Hiawatha Seam Structure Contour Map. The thickness and orientation of the Blind Canyon seam are shown, respectively, on Plates 6-3--Blind Canyon Seam Isopach Map and 6-4--Blind Canyon Seam Structure Contour Map. The thickness and orientation of the Tank Seam are shown, respectively, on Plates 6-11--Tank Seam Isopach Map and 6-12--Tank Seam Structure Contour Map. The respective depths of the coal seams are shown on Plates 6-6--Hiawatha Seam Overburden Map, 6-2--Blind Canyon Seam Overburden Map and 6-10--Tank Seam Overburden Map.

All of the maps which were revised in 1997 to show the coal resource and geologic information for Federal Lease U-024316 were certified by Kimly C. Mangum, a licensed professional engineer registered in the state of Utah.

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Mine Workings Maps

The permit area was enlarged in 1997 to include Federal Lease U-024316, which lies at the north end of the original permit area. Plate 3-4C--Bear Canyon No. 2 Mine was revised to show anticipated panel and entry development in the lease area. Plate 3-4C was certified by Kimly C. Mangum, a licensed professional engineer registered in the state of Utah.

Permit Area Boundary Maps

The permit area was enlarged in 1997 to include Federal Lease U-024316, which lies at the north end of the original permit area. The additional area is shown on Plate 2-1--Permit Area. Plate 2-1 was certified by Kimly C. Mangum, a licensed professional engineer registered in the state of Utah.

Surface and Subsurface Ownership Maps

The permit area was enlarged in 1997 to include Federal Lease U-024316, which lies at the north end of the original permit area. Surface ownership information for the lease area was added to Plate 2-2--Surface Ownership. Subsurface ownership information for the lease area was added to Plate 2-3--Sub-Surface Ownership. Plates 2-2 and 2-3 were both certified by Kimly C. Mangum, a licensed professional engineer registered in the state of Utah.

Findings:

The plan fulfills the requirements of this section.

OPERATION PLAN

MINING OPERATIONS AND FACILITIES

Regulatory Reference: 30 CFR Sec. 784.2, 784.11; R645-301-231, -301-526, -301-528.

Analysis:

General

The permit area was enlarged in 1997 to include Federal Lease U-024316, which lies at the north end of the original permit area. The additional area is shown on Plate 2-1--Permit Area.

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All 3 minable seams--the Tank seam, the Blind Canyon seam, and the Hiawatha seam--are mined in Federal Lease U-024316. The Blind Canyon seam, which is the middle seam, is entered directly through the Bear Canyon #1 portal. The Hiawatha Seam, which is the lower seam, is entered by way of a rock slope from the Blind Canyon Seam. The Tank Seam, which is the upper seam, is entered directly through the Bear Canyon #2 portal. Main entries are columnized to prevent "punching" from the upper to the lower seams.

Findings:

The plan fulfills the requirements of this section.

COAL RECOVERY

Regulatory Reference: 30 CFR Sec. 817.59; R645-301-522.

Analysis:

The addition of Federal Lease U-024316 in 1997 boosted annual production to approximately 750,000 tons. The overall recovery rate in this Federal lease area is expected to be about 50%, which is the national average for room-and-pillar operations of this type.

Findings:

The plan fulfills the requirements of this section.

SUBSIDENCE CONTROL PLAN

Regulatory Reference: 30 CFR Sec. 784.20, 817.121, 817.122; R645-301-521, -301-525, -301-724.

Analysis:

Subsidence control plan.

The permit area was enlarged in 1997 to include Federal Lease U-024316, which lies at the north end of the original permit area. Three subsidence monitoring points were added to the existing network to include the Federal lease area. The locations of these points are shown on Plate 3-3--Subsidence Map.

Using standard subsidence charts, the permittee has calculated the maximum

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anticipated subsidence from the mining of each coal seam and has tabulated that information on page 3C-4. There is, however, an ambiguity in this information. The first line of page 3C-4 says that the calculated subsidence values which follow on that page are for the mining of 3 coal seams. The information which then follows, however, is only for the mining of the Tank Seam and the Hiawatha Seam. This discrepancy must be corrected before this section of the plan can be approved.

Findings:

The plan does not fulfill the requirements of this section.

The permittee must provide the following, prior to approval, in accordance with the requirements of:

R645-301-525.150, the permittee must correct the discrepancies in the calculated subsidence values which are found on page 3C-4.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Analysis:

Affected area maps.

The permit area was enlarged in 1997 to include Federal Lease U-024316, which lies at the north end of the original permit area. The additional area is shown on Plate 2-1--Permit Area. All other relevant maps were also revised to show the Federal lease. Plate 2-1 and all other revised maps were certified by Kimly C. Mangum, a licensed professional engineer registered in the state of Utah.

Mine workings maps.

The permit area was enlarged in 1997 to include Federal Lease U-024316, which lies at the north end of the original permit area. Plate 3-4C--Bear Canyon No. 2 Mine was revised to show anticipated panel and entry development in the lease area. Plate 3-4C was certified by Kimly C. Mangum, a licensed professional engineer registered in the state of Utah.

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Monitoring and sample location maps.

The permit area was enlarged in 1997 to include Federal Lease U-024316, which lies at the north end of the original permit area. Three subsidence monitoring points were added to the existing network to include the Federal lease area. The locations of these points are shown on Plate 3-3--Subsidence Map. Plate 3-3 was certified by Kimly C. Mangum, a licensed professional engineer registered in the state of Utah.

Findings:

The plan fulfills the requirements of this section.

RECOMMENDATION(S):

Before the Division can approve this amendment, the requirements of R645-301-525.150 must be met, as explained above.

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